ORDER NO. SD7607-1097

Service Manual

stereo integrated amplifier

SU-2300

(XG), (XGH), (XE),
(XSD), (XSW)

Top Board is black for [XG], [XGH], [XSD] & [XSW]

TECHNICAL SPECIFICATIONS (IHF)

Specifications are subject to change without for further improvement.

AMPLIFIER SECTION

1kHz continuous power:	each channel driven	20W/20W (4Ω) 15W/15W (8Ω)
1kHz continuous power:	both channels driven	17W + 17W (4Ω) 12W + 12W (8Ω)
Power bandwidth (both channels driven at 8Ω):		5Hz～40kHz, −3 dB
Total harmonic distortion:		0.9%
Intermodulation distortion:		0.9%
Damping factor:		20 (8Ω), 10 (4Ω)
Input sensitivity and impedance:	PHONO	2mV/47kΩ
	TUNER	180mV/30kΩ
	AUX/TAPE, REC/PLAY input	200mV/30kΩ
PHONO maximum input voltage:	(1kHz, RMS)	90mV
S/N (IHF, A):	PHONO	70 dB
	TUNER, AUX/TAPE	85 dB
Frequency response.	PHONO	RIAA Standard curve +1.0 dB
	TUNER, AUX/TAPE	15Hz～100kHz, +1dB, −3dB
Tone controls:	BASS	50Hz, +12 dB～−12 dB
	TREBLE	10kHz + 10 dB～−10 dB
Residual hum and noise:		0.8mV
Output voltage:	REC/PLAY output	30mV
Load impedance:		4～16Ω

GENERAL

Power consumption:	90W
Power supply:	AC 220V/240V, 50/60Hz
Dimensions (W x H x D):	392 x 89 x 243mm (15⁷⁄₁₆" x 3½" x 9⁹⁄₁₆")
Weight:	3.5kg (7.7 lb.)

TECHNISCHE DATEN (DIN 45 500)

Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

VERSTÄRKERTEIL

RMS-Dauertonleistung bei 1kHz:		
jeder Kanäle einzeln ausgesteuert		2 x 20W (4Ω) 2 x 15W (8Ω)
RMS-Dauertonleistung bei 1kHz:		
beide Kanäle zusammen ausgesteuert		2 x 17W (4Ω) 2 x 12W (8Ω)
Leistungsbandbreite (beide Kanäle zusammen ausgesteuert bei 4Ω):		5Hz～40kHz, −3 dB
Harmonische Verzerrungen:		
Nennleistung bei 40Hz～16,000Hz, 4Ω		0.9%
Intermodulationsverzerrung:		
Nennleistung bei 250Hz: 8000Hz = 4:1, 4Ω		0.9%
Dämpfungsfaktor:		20 (8Ω), 10 (4Ω)
Eingangsempfindlichkeit & Impedanz:	PHONO	2mV/47kΩ
	TUNER	180mV/30kΩ
	AUX/TAPE, REC/PLAY Wiedergabe	200mV/30kΩ
PHONO Maximale Eingangsspannungen: (1kHz, RMS)		90mV
Fremdspannungsabstand:	Nennleistung PHONO	60 dB
	TUNER, AUX/TAPE	70 dB
	50mW Ausgangsleistung PHONO	55 dB
	TUNER, AUX/TAPE	58 dB
Frequenzgang:		15Hz～100kHz, +1 dB, −3 dB
Klangregler:	BÄSSE	50Hz, +12 dB～−12 dB
	HÖHEN	10kHz, +10 dB～−10 dB
Hum & Noise:		0.8mV
Ausgangsspannungen:	REC/PLAY Aufnahme	30mV
Endimoedanz:		4～16Ω

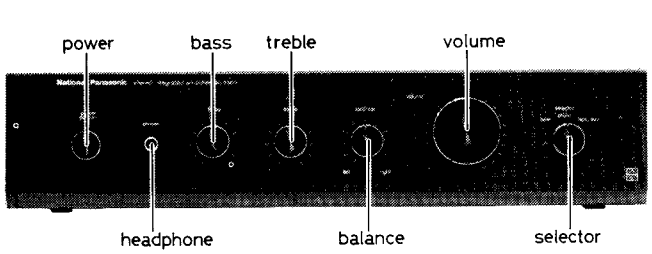
ALLGEMEINE DATEN

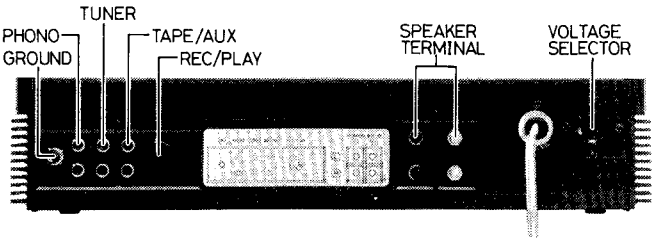
Leistungsaufnahme:	90W
Netzspannung umschaltbar:	220V/240V
Abmessungen (B x H x T):	392 x 89 x 243mm
Gewicht:	3.5kg

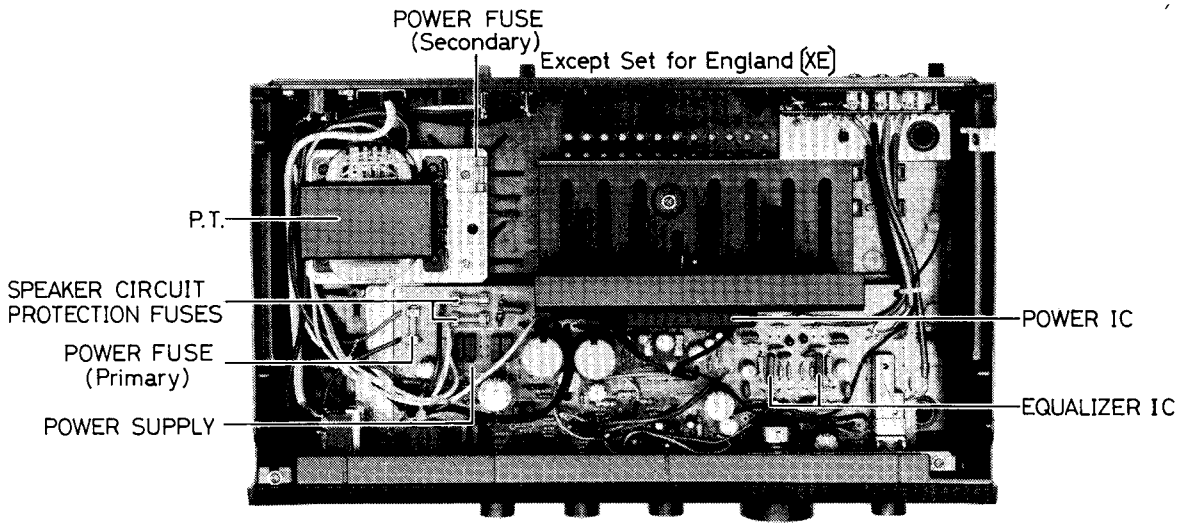
National Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka, Japan

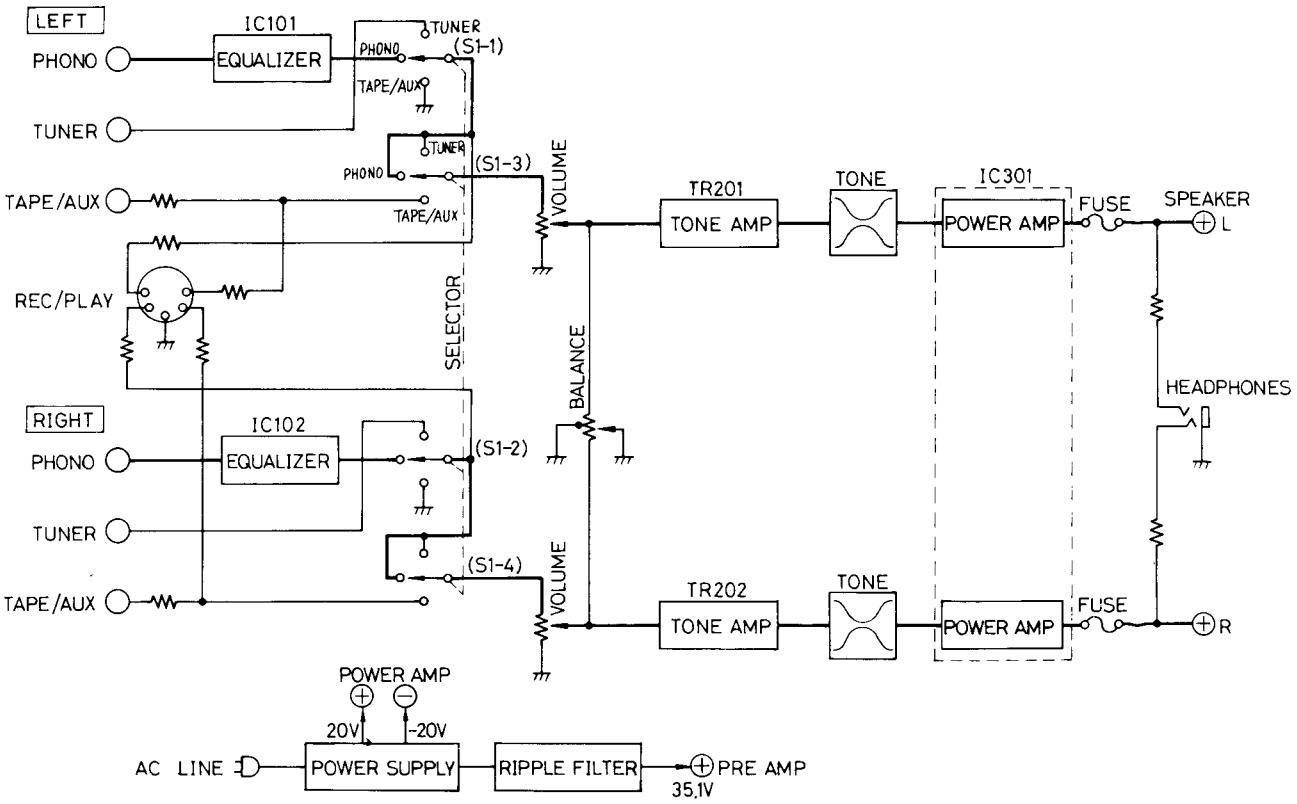
■ LOCATION OF CONTROLS







■ BLOCK DIAGRAM



■ REPLACEMENT PARTS LIST

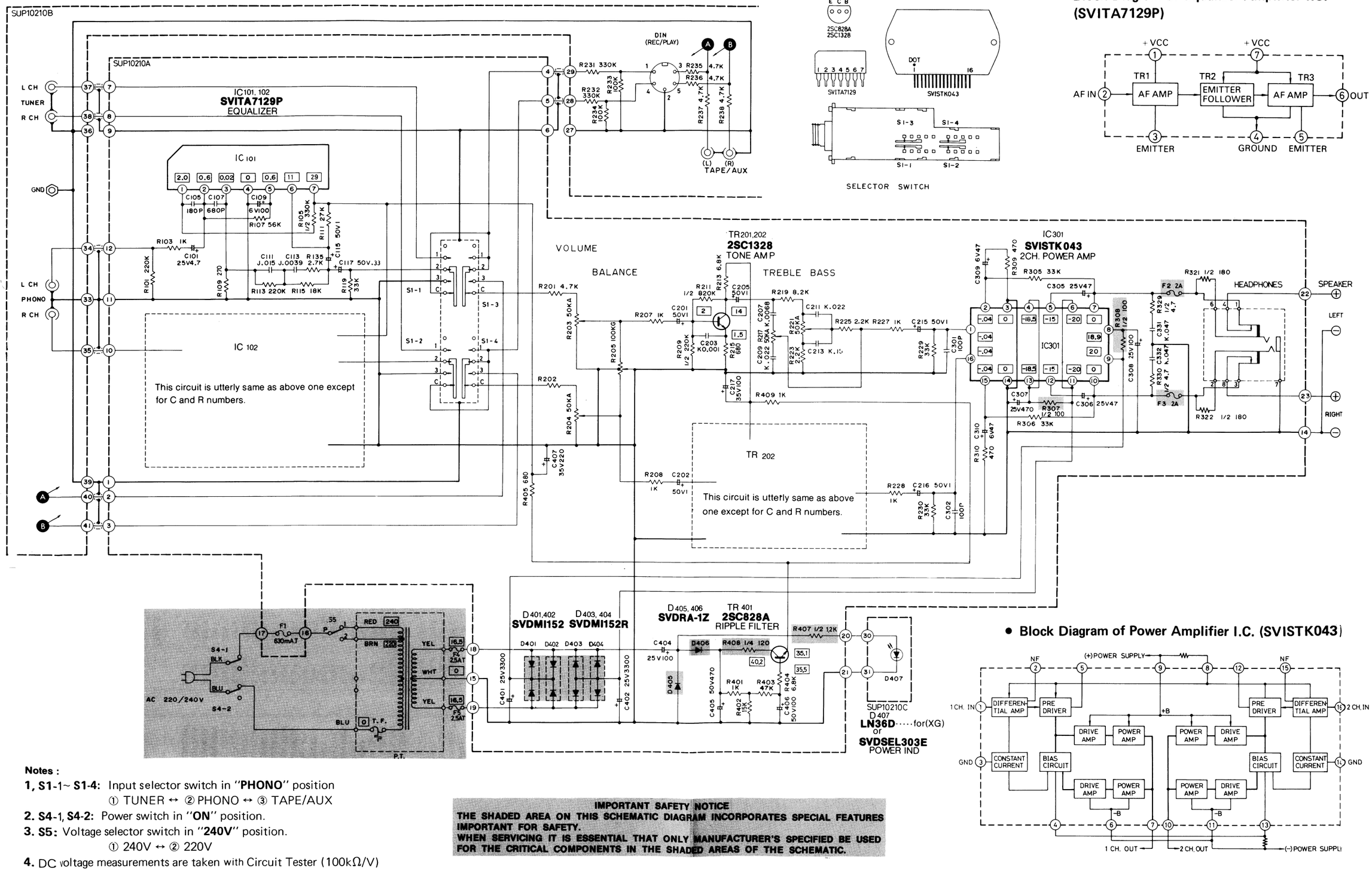
Important Safety Notice
Components identified by shaded area have special characteristics important for safety.
When replacing any of these components use only manufacturer's specified parts.

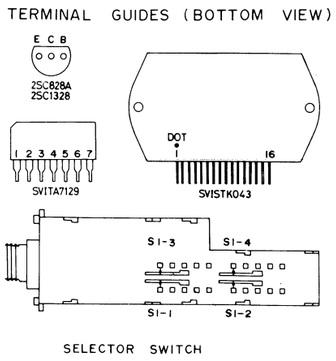
NOTE: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
		INTEGRATED CIRCUITS			
IC101, 102	SVITA7129P	Equalizer, Amplifier	2		
IC301	SVISTK043K	2 channel Power Amplifier	1		O
		TRANSISTORS			
TR201, 202	**2SC1328-T**	Tone Amplifier & Ripple Filter	3		
401		(Use in ranks S or T)			
		DIODES			
D401, 402	SVDMI152	Rectifier	2		
D403, 404	SVDMI152R	Rectifier	2		
D405, 406	SVDRA-1Z	Rectifier	2		
D407 [XG]	LN36D	Power Indicator, LED, Set for [XG]	1		O
D407 [XGH,XSD, XSW, XE]	SVDSEL303E	Power Indicator, LED, Set for [XGH], [XSD], [XSW] & [XE]	1		
		TRANSFORMER			
[XG, XGH, XSD, XSW]	SLT5A1-W	Power Transformer, Set for [XG], [XGH], [XSD] & [XSW]	1		O
[XE]	SLT5A7-W	Power Transformer, Set for [XE]	1		O
		RESISTORS			
R101	**ERD25TJ224**	220kΩ, 2/5W, ±5%, Carbon	1		
R102	**ERD25TJ224**	220kΩ, 2/5W, ±5%, Carbon	1		
R103	**ERD25TJ102**	1kΩ, 2/5W, ±5%, Carbon	1		
R104	**ERD25TJ102**	1kΩ, 2/5W, ±5%, Carbon	1		
R105	ERD12TSJ334	330kΩ, 1/2W, ±5%, Carbon	1		
R106	ERD12TSJ334	330kΩ, 1/2W, ±5%, Carbon	1		
R107	**ERD25TJ563**	56kΩ, 2/5W, ±5%, Carbon	1		
R108	**ERD25TJ563**	56kΩ, 2/5W, ±5%, Carbon	1		
R109	**ERD25TJ271**	270Ω, 2/5W, ±5%, Carbon	1		
R110	**ERD25TJ271**	270Ω, 2/5W, ±5%, Carbon	1		
R111	**ERD25TJ273**	27kΩ, 2/5W, ±5%, Carbon	1		
R112	**ERD25TJ273**	27kΩ, 2/5W, ±5%, Carbon	1		
R113	**ERD25TJ224**	220kΩ, 2/5W, ±5%, Carbon	1		
R114	**ERD25TJ224**	220kΩ, 2/5W, ±5%, Carbon	1		
R115	**ERD25TJ183**	18kΩ, 2/5W, ±5%, Carbon	1		
R116	**ERD25TJ183**	18kΩ, 2/5W, ±5%, Carbon	1		
R119	**ERD25TJ333**	33kΩ, 2/5W, ±5%, Carbon	1		
R120	**ERD25TJ333**	33kΩ, 2/5W, ±5%, Carbon	1		
R135	**ERD25TJ272**	2.7kΩ, 2/5W, ±5%, Carbon	1		
R136	**ERD25TJ272**	2.7kΩ, 2/5W, ±5%, Carbon	1		
R201	**ERD25TJ472**	4.7kΩ, 2/5W, ±5%, Carbon	1		
R202	**ERD25TJ472**	4.7kΩ, 2/5W, ±5%, Carbon	1		
R207	**ERD25TJ102**	1kΩ, 2/5W, ±5%, Carbon	1		
R208	**ERD25TJ102**	1kΩ, 2/5W, ±5%, Carbon	1		
R209	ERD12TSJ224	220kΩ, 1/2W, ±5%, Carbon	1		
R210	ERD12TSJ224	220kΩ, 1/2W, ±5%, Carbon	1		
R211	ERD12TSJ824	820kΩ, 1/2W, ±5%, Carbon	1		
R212	ERD12TSJ824	820kΩ, 1/2W, ±5%, Carbon	1		
R213	**ERD25TJ682**	6.8kΩ, 2/5W, ±5%, Carbon	1		
R214	**ERD25TJ682**	6.8kΩ, 2/5W, ±5%, Carbon	1		
R215	**ERD25TJ681**	680Ω, 2/5W, ±5%, Carbon	1		
R216	**ERD25TJ681**	680Ω, 2/5W, ±5%, Carbon	1		
R219	**ERD25TJ822**	8.2kΩ, 2/5W, ±5%, Carbon	1		
R220	**ERD25TJ822**	8.2kΩ, 2/5W, ±5%, Carbon	1		
R223	**ERD25TJ222**	2.2kΩ, 2/5W, ±5%, Carbon	1		
R224	**ERD25TJ222**	2.2kΩ, 2/5W, ±5%, Carbon	1		
R225	**ERD25TJ222**	2.2kΩ, 2/5W, ±5%, Carbon	1		
R226	**ERD25TJ222**	2.2kΩ, 2/5W, ±5%, Carbon	1		
R227	**ERD25TJ102**	1kΩ, 2/5W, ±5%, Carbon	1		
R228	**ERD25TJ102**	1kΩ, 2/5W, ±5%, Carbon	1		
R229	**ERD25TJ333**	33kΩ, 2/5W, ±5%, Carbon	1		
R230	**ERD25TJ333**	33kΩ, 2/5W, ±5%, Carbon	1		
R231	**ERD25TJ334**	330kΩ, 2/5W, ±5%, Carbon	1		
R232	**ERD25TJ334**	330kΩ, 2/5W, ±5%, Carbon	1		
R233	**ERD25TJ104**	100kΩ, 2/5W, ±5%, Carbon	1		
R234	**ERD25TJ104**	100kΩ, 2/5W, ±5%, Carbon	1		
R235	**ERD25TJ472**	4.7kΩ, 2/5W, ±5%, Carbon	1		
R236	**ERD25TJ472**	4.7kΩ, 2/5W, ±5%, Carbon	1		
R237	**ERD25TJ472**	4.7kΩ, 2/5W, ±5%, Carbon	1		
R238	**ERD25TJ472**	4.7kΩ, 2/5W, ±5%, Carbon	1		
R305	**ERD25TJ333**	33kΩ, 2/5W, ±5%, Carbon	1		
R306	**ERD25TJ333**	33kΩ, 2/5W, ±5%, Carbon	1		
R307	ERQ12HJ101	100Ω, 1/2W, ±5%, Fuse Type Metallic	1		
R308	ERQ12HJ101	100Ω, 1/2W, ±5%, Fuse Type Metallic	1		
R309	**ERD25TJ471**	470Ω, 2/5W, ±5%, Carbon	1		
R310	**ERD25TJ471**	470Ω, 2/5W, ±5%, Carbon	1		
R329	**ERD25TJ4R7**	4.7Ω, 2/5W, ±5%, Carbon	1		
R330	**ERD25TJ4R7**	4.7Ω, 2/5W, ±5%, Carbon	1		
R331	**ERD25TJ181**	180Ω, 2/5W, ±5%, Carbon	1		
R332	**ERD25TJ181**	180Ω, 2/5W, ±5%, Carbon	1		
R401	**ERD25TJ102**	1kΩ, 2/5W, ±5%, Carbon	1		
R402	**ERD25TJ153**	15kΩ, 2/5W, ±5%, Carbon	1		
R403	**ERD25TJ473**	47kΩ, 2/5W, ±5%, Carbon	1		
R404	**ERD25TJ682**	6.8kΩ, 2/5W, ±5%, Carbon	1		
R405	**ERD25TJ681**	680Ω, 2/5W, ±5%, Carbon	1		
R407	ERD12FJ122	1.2kΩ, 1/2W, ±5%, Carbon	1		
R408	**ERD14FJ121**	120Ω, 1/4W, ±5%, Carbon	1		
R409	**ERD25TJ102**	1kΩ, 2/5W, ±5%, Carbon	1		
		VARIABLE RESISTORS			
R203, 204	EWFMNA026A54	50kΩ (A), Volume Control	1		
R205	EVH9HAF25G15	100kΩ (G), Balance Control	1		
R217, 218	EWKB7AF25A54	50kΩ (A), Bass & Treble Control	2		O
221, 222					
		CAPACITORS			
C101	ECSZ25EF4R7	4.7μF, 25WV, Electrolytic	1		
C102	ECSZ25EF4R7	4.7μF, 25WV, Electrolytic	1		
C105	ECCD1H181K	180pF, 50WV, ±10%, Ceramic	1		
C106	ECCD1H181K	180pF, 50WV, ±10%, Ceramic	1		
C107	ECKD1H681KB	680pF, 50WV, ±10%, Ceramic	1		
C108	ECKD1H681KB	680pF, 50WV, ±10%, Ceramic	1		
C109	**ECEA10V100V**	100μF, 10WV, Electrolytic	1		
C110	**ECEA10V100V**	100μF, 10WV, Electrolytic	1		
C111	ECQM1H153JZ	0.015μF, 50WV, ±5%, Polyester	1		
C112	ECQM1H153JZ	0.015μF, 50WV, ±5%, Polyester	1		
C113	ECQM1H392JZ	0.0039μF, 50WV, ±5%, Polyester	1		
C114	ECQM1H392JZ	0.0039μF, 50WV, ±5%, Polyester	1		
C115	**ECEA50M1**	1μF, 50WV, Electrolytic	1		
C116	**ECEA50M1**	1μF, 50WV, Electrolytic	1		
C117	ECEA50MR33	0.33μF, 50WV, Electrolytic	1		
C118	ECEA50MR33	0.33μF, 50WV, Electrolytic	1		
C201	**ECEA50M1**	1μF, 50WV, Electrolytic	1		
C202	**ECEA50M1**	1μF, 50WV, Electrolytic	1		
C203	ECKD1H102PF	0.001μF, 50WV, +100% −0%, Ceramic	1		
C204	ECKD1H102PF	0.001μF, 50WV, +100% −0%, Ceramic	1		
C205	**ECEA50M1**	1μF, 50WV, Electrolytic	1		
C206	**ECEA50M1**	1μF, 50WV, Electrolytic	1		
C207	ECQM1H682KZ	0.0068μF, 50WV, ±10%, Polyester	1		
C208	ECQM1H682KZ	0.0068μF, 50WV, ±10%, Polyester	1		
C209	ECQM1H223KZ	0.022μF, 50WV, ±10%, Polyester	1		
C210	ECQM1H223KZ	0.022μF, 50WV, ±10%, Polyester	1		
C211	ECQM1H223KZ	0.022μF, 50WV, ±10%, Polyester	1		
C212	ECQM1H223KZ	0.022μF, 50WV, ±10%, Polyester	1		
C213	ECQM1H154KZ	0.15μF, 50WV, ±10%, Polyester	1		
C214	ECQM1H154KZ	0.15μF, 50WV, ±10%, Polyester	1		
C215	**ECEA50M1**	1μF, 50WV, Electrolytic	1		
C216	**ECEA50M1**	1μF, 50WV, Electrolytic	1		
C217	**ECEA35V100V**	100μF, 35WV, Electrolytic	1		
C301	ECCD1H101K	100pF, 50WV, ±10%, Ceramic	1		
C302	ECCD1H101K	100pF, 50WV, ±10%, Ceramic	1		
C305	**ECEA35V47V**	47μF, 35WV, Electrolytic	1		
C306	**ECEA35V47V**	47μF, 35WV, Electrolytic	1		
C307	**ECEA35V470V**	470μF, 35WV, Electrolytic	1		
C308	**ECEA25V100V**	100μF, 25WV, Electrolytic	1		
C309	**ECEA16V47V**	47μF, 16WV, Electrolytic	1		
C310	**ECEA16V47V**	47μF, 16WV, Electrolytic	1		
C311	ECQM1H473KZ	0.047μF, 50WV, ±10%, Polyester	1		
C332	ECQM1H473KZ	0.047μF, 50WV, ±10%, Polyester	1		
C401	ECET25R332SU	3300μF, 25WV, Electrolytic	1		
C402	ECET25R332SU	3300μF, 25WV, Electrolytic	1		
C404	**ECEA25V100V**	100μF, 25WV, Electrolytic	1		
C405	**ECEA50V470V**	470μF, 50WV, Electrolytic	1		
C406	**ECEA50V100V**	100μF, 50WV, Electrolytic	1		
C407	**ECEA50V220V**	220μF, 50WV, Electrolytic	1		
		FUSES			
F1	XBA2C06TR0	630mA.T Fuse, Power Source	1		
F2, 3	XBA2C20SS0	2A Fuse, Speaker Circuit Protection	2		
F4, 5	XBA2C25TR0	2.5A.T Fuse, Power Source (Except set for [XE])	2		
		SWITCHES			
S1	SSR49	Input Selector Switch	1		
S4	ESB7075	Power Switch	1		
S5	ESE376	Voltage Selector Switch	1		O
		CABINET and CHASSIS PARTS			
1	SBN601	Knob, Bass, Treble, Balance & Selector	4		O
2	SBN599	Knob, Volume Control	1		O
3	SBC153	Button, Power Switch	1		O

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
4	SGW6671	Panel, Front	1		O
5	XTW3+12E	Screw, Panel, Bottom Board & Heat Sink M'tg	8		
6	XTV3+10C	Screw, P.C.B. M'tg	2		
7	SKL153-1	Foot, Set	4		
8	SKU5410	Bottom Board	1		
9	SHR401-1	Lock Pin, Input & Speaker Terminal	2		
10	SJT343	Ground Terminal, Top Board	1		
11	XTB3+10BFZ	Screw, AC Cord Metal Clamp M'tg	2		
12	XSB3+12FZS	Screw, Voltage Selector Switch M'tg	2		
13	SJF8601	Terminal, Input, GND & Tape Deck	1		O
14	SJF3417	Terminal, Speaker	1		
15	XWA3B	Spring Washer, Voltage Selector Switch	2		
16	XNG3BS	Nut, Voltage Selector Switch M'tg	2		
17	XTV3+8C	Screw, Power Transformer M'tg	4		
18[XG]	SJA95	AC Cord, Set for [XG]	1		
18[XGH, XSD]	SJA81	AC Cord, Set for [XGH] & [XSD]	1		
18[XSW]	**SJA68**	AC Cord, Set for [XSW]	1		
18[XE]	SJA73	AC Cord, Set for [XE]	1		
19[XG, XGH, XSD, XSW]	SHR127	Bushing, AC Cord Set for [XG], [XGH], [XSD] & [XSW]	1		
19[XE]	SHR131	Bushing, AC Cord, Set for [XE]	1		
20[XG, XGH, XSD, XSW]	SGP9015	Metal Clamp, AC Cord Bushing	1		O
20 [XE]	SGP9015-1	Metal Clamp, AC Cord Bushing	1		O
21	SNW423	Washer, Top Board M'tg Screw	4		
22	XTB4+12BFZ	Screw, Top Board M'tg	4		
23	SQXA4112	Caution Label, Screw	1		
24[XG,XGH] XSD, XSW]	SKP3-1	Top Board, Set for [XG], [XGH], [XSD] & [XSW]	1		O
24[XE]	SKP3-3	Top Board, Set for [XE]	1		O
25	XNS9	Nut, Headphone Jack M'tg	1		
26	SNE31	Washer, Headphones Jack	1		
27	SJJ55	Jack, Headphones	1		
28	XNS8	Nut, Volume & Selector Switch M'tg	5		
29	XWV8	Washer, Volume & Selector Switch	5		
30	SJT347	Holder, Fuse	6		
31	SKM1592	Cabinet	1		O
32[XG, XGH]	SGT12370	Name Plate, Set for [XG] & [XGH]	1		O
32[XSD, XSW]	SGT12371	Name Plate, Set for [XSD] & [XSW]	1		O
33	SGK759-1	Indicator Plate, Input Terminal	1		
34	SGK715-1	Indicator Plate, Volume Scale	1		O
35 [XG, XGH, XSD, XSW]	QTF1020	Holder, Fuse (Except Set for [XE])	1		
		ACCESSORIES			
A1	XBA2C20SS0	2A Fuse, Speaker Circuit Protection	2		
A2	RJP5	Pin Plug	1		
		PACKING PARTS			
P1	SPP481	Soft Bag	1		
P2[XG, XSW]	SPS513	Pad, Right Side, Set for [XG] & [XSW]	1		O
P2[XGH,XSD]	SPS513-1	Pad, Right Side, Set for [XGH] & [XSD]	1		O
P2[XE]	SPS513-2	Pad, Right Side, Set for [XE]	1		O
P3[XG, XSW]	SPS511	Pad, Left Side, Set for [XG] & [XSW]	1		O
P3[XGH,XSD]	SPS511-1	Pad, Left, Side, Set for [XGH] & [SXD]	1		O
P3[XE]	SPS511-2	Pad, Left Side, Set for [XE]	1		O
P4[XG,XSW]	SPS517	Pad, Bottom Side, Set for [XG,XSW]	1		O
P4[XGH,XSD]	SPS519	Pad, Bottom Side, Set for [XGH,XSD]	1		O
P4[XE]	SPS515	Pad, Bottom Side, Set for [XE]	1		O
P5[XG]	SPG753-1	Carton Box, Set for [XG]	1		O

Schematic Diagram..... Model SU-2300 (This schematic diagram may be modified at any time with the development of new technology)





- **Block Diagram of Equalizer Amplifier I.C. (SVITA7129P)**

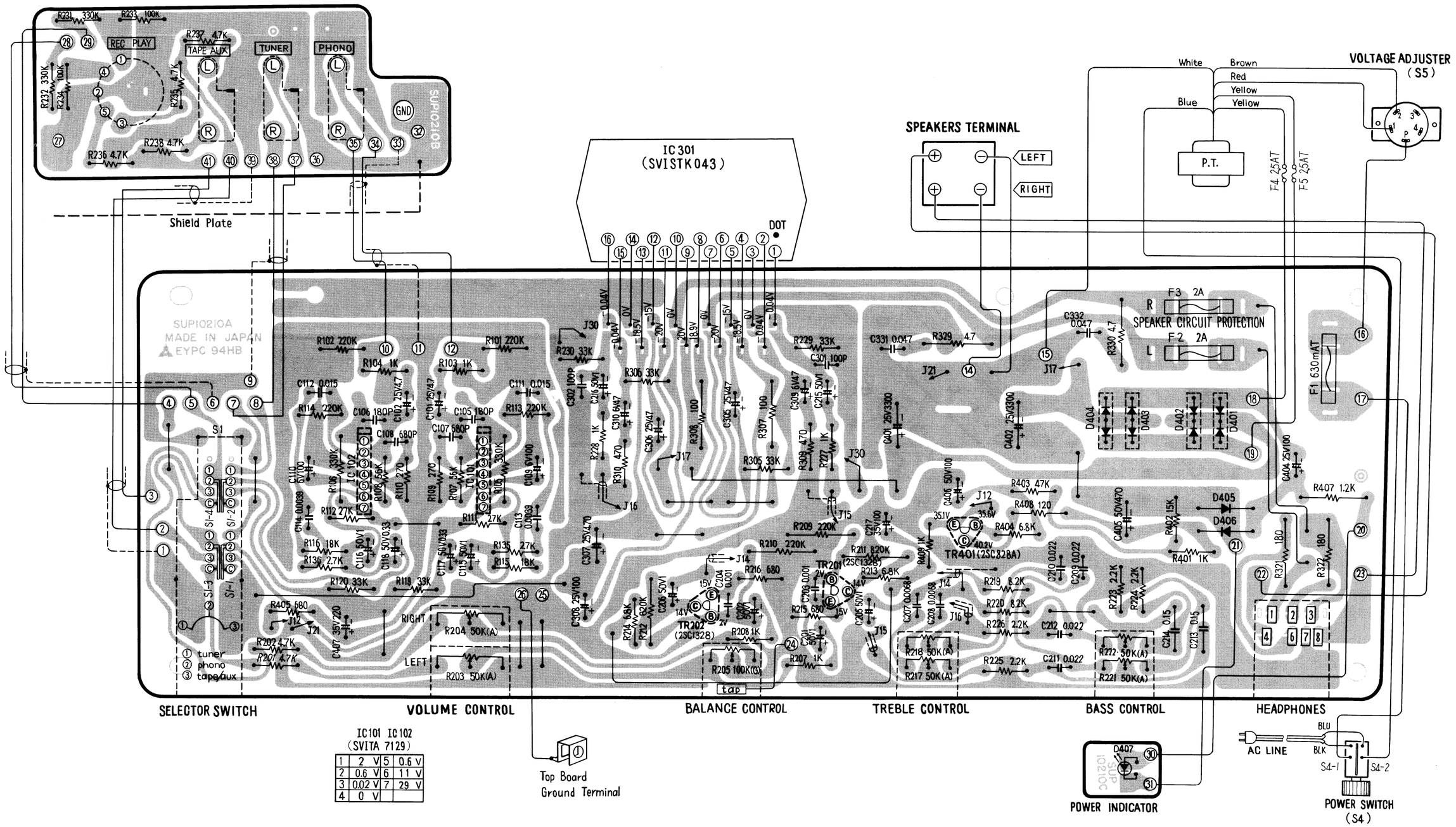
- **Block Diagram of Power Amplifier I.C. (SVISTK043)**

Notes :

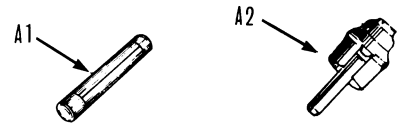
1. **S1-1~ S1-4:** Input selector switch in "**PHONO**" position
   ① TUNER ↔ ② PHONO ↔ ③ TAPE/AUX
2. **S4-1, S4-2:** Power switch in "**ON**" position.
3. **S5:** Voltage selector switch in "**240V**" position.
   ① 240V ↔ ② 220V
4. DC voltage measurements are taken with Circuit Tester (100kΩ/V) from chassis ground.

IMPORTANT SAFETY NOTICE
THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR SAFETY.
WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

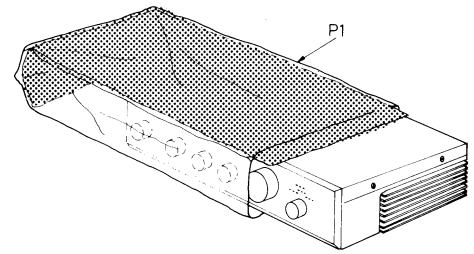
Printed Circuit Board Wiring View ..... Model SU-2300

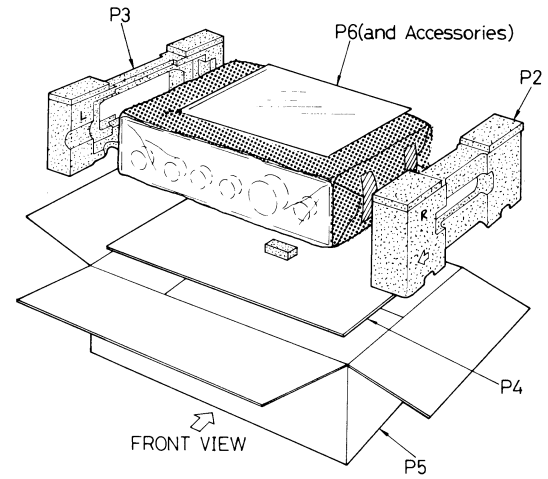


■ ACCESSORIES

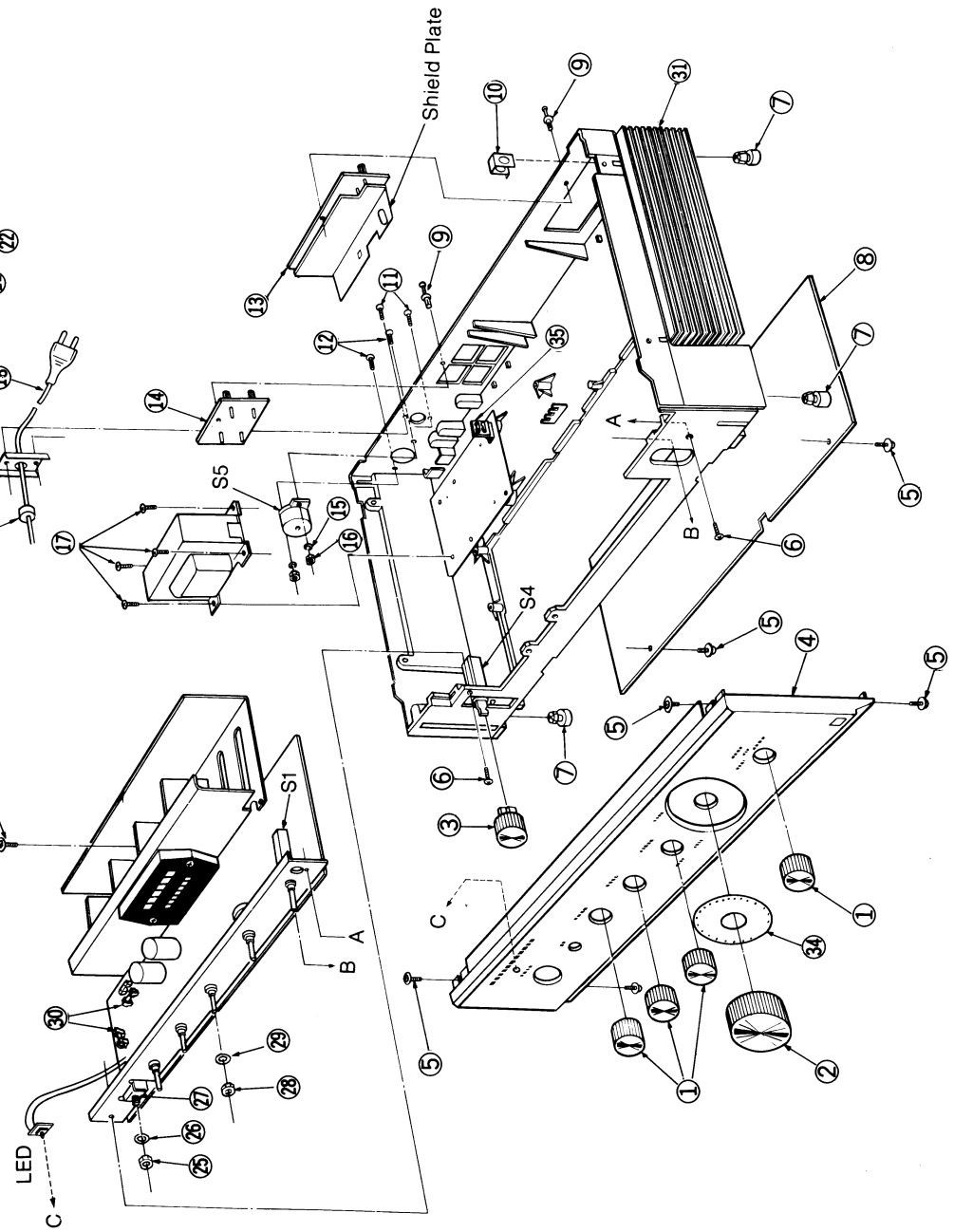


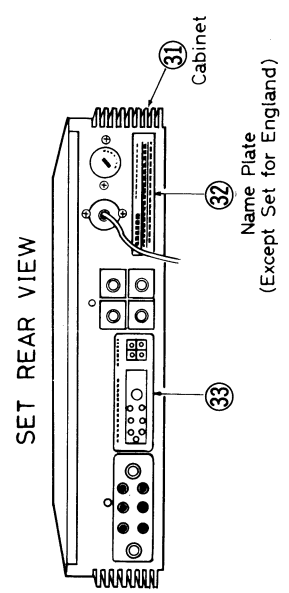
■ PACKINGS





■ LOCATION OF CABINET AND CHASSIS PARTS





Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
P5[XGH]	SPG755-1	Carton Box, Set for [XGH]	1	○
P5[XSD]	SPG755-3	Carton Box, Set for [XSD]	1	○
P5[XSW]	SPG753-3	Carton Box, Set for [XSW]	1	○
P5[XE]	SPG751-1	Carton Box, Set for [XE]	1	○
P6[XG,XGH, XSD,XSW]	SQP1287	Printed Matter, Set for [XG], [XGH], [XSD] & [XSW]	1	○
P6[XE]	SQF1303	Printed Matter, Set for [XE]	1	○

Notes:
Set for [XG] are European
Set for [XGH] is Holland.
Set for [XSD] are Denmark, Sweden, Norway and Finland.
Set for [XSW] is Swiss.
Set for [XE] is England.

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